

Claims

What is claimed is:

1. An apparatus for generating oscillatory air pulses in a bladder positioned about a person, comprising:

5 an oscillatory air flow generator;  
a positive air flow generator operably connected with the oscillatory air flow generator; and  
control means operably connected with the oscillatory air flow generator for controlling the frequency  
10 of the oscillatory air flow generator and operably connected with the positive air flow generator for controlling the peak pressure generated by the positive air flow generator.

2. The apparatus of claim 1 further comprising means for connecting the oscillatory air flow generator with the  
15 bladder.

3. The apparatus of claim 1 wherein the oscillatory air flow generator comprises:

an air chamber;  
a reciprocating diaphragm operably connected with  
20 the air chamber; and  
a first motor operably connected with the diaphragm.

4. The apparatus of claim 3, wherein the control means comprises a first feedback circuit for causing the oscillatory air flow generator to generate air pulses at a  
25 predetermined frequency.

5. The apparatus of claim 4 wherein the first feedback circuit comprises:

means for detecting the oscillation rate in the air chamber;

30 means for comparing the detected oscillation rate with a predetermined rate; and

SUB B  
SUB A  
means for adjusting the oscillatory air flow generator so that the detected oscillation rate approximately equals the predetermined rate.

6. The apparatus of claim 4 wherein the predetermined oscillation rate is user-selectable.

SUB B3  
7. The apparatus of claim 1 wherein the positive air flow generator comprises a blower, and a second motor operably connected with the blower.

8. The apparatus of claim 7, wherein the control means further comprises a second feedback circuit for causing the positive air flow generator to maintain a predetermined peak pressure in the oscillatory air pulses.

9. The apparatus of claim 8 wherein the second feedback circuit comprises:

15 means for detecting the peak pressure in the air chamber;

means for comparing the detected peak pressure with a predetermined value; and

20 means for adjusting the positive air flow generator so that the detected peak pressure equals the predetermined value.

10. The apparatus of claim 8 wherein the predetermined peak pressure is user-selectable.

6 11. The apparatus of claim 7 further comprising means  
25 connected to the second motor for preventing the second motor from operating the blower above a predetermined pressure.

7 12. The apparatus of claim 11 wherein the means for preventing comprises a fuse.

SUB B5  
30 13. The apparatus of claim 1, further comprising a remote start/stop control operably connected with the control means.

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11 ~~14.~~ The apparatus of claim ~~13~~ further comprises a timer operably connected with the remote start/stop control.

~~15.~~ A method for generating oscillatory air pulses in a bladder positioned about a person, comprising:

- 5       generating an oscillatory air flow;  
      controlling the oscillatory air flow to provide a predetermined frequency;  
      generating a positive air flow; and  
      controlling the peak pressure of the positive air  
10 flow to provide a predetermined peak pressure.

16. The method of claim 15 wherein the step of controlling the oscillatory air flow comprises:

      detecting the oscillation frequency of the oscillatory air flow; and

- 15       adjusting the oscillatory air flow to approximately equal the predetermined frequency.

17. The method of claim 15 wherein the step of controlling the positive air flow comprises:

- 20       detecting the peak pressure of the positive air flow; and

      adjusting the positive air flow to approximately equal the predetermined peak pressure.

18. The method of claim 15 further comprising selectively adjusting the predetermined frequency.

- 25 19. The method of claim 15 further comprising selectively adjusting the predetermined peak pressure.

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